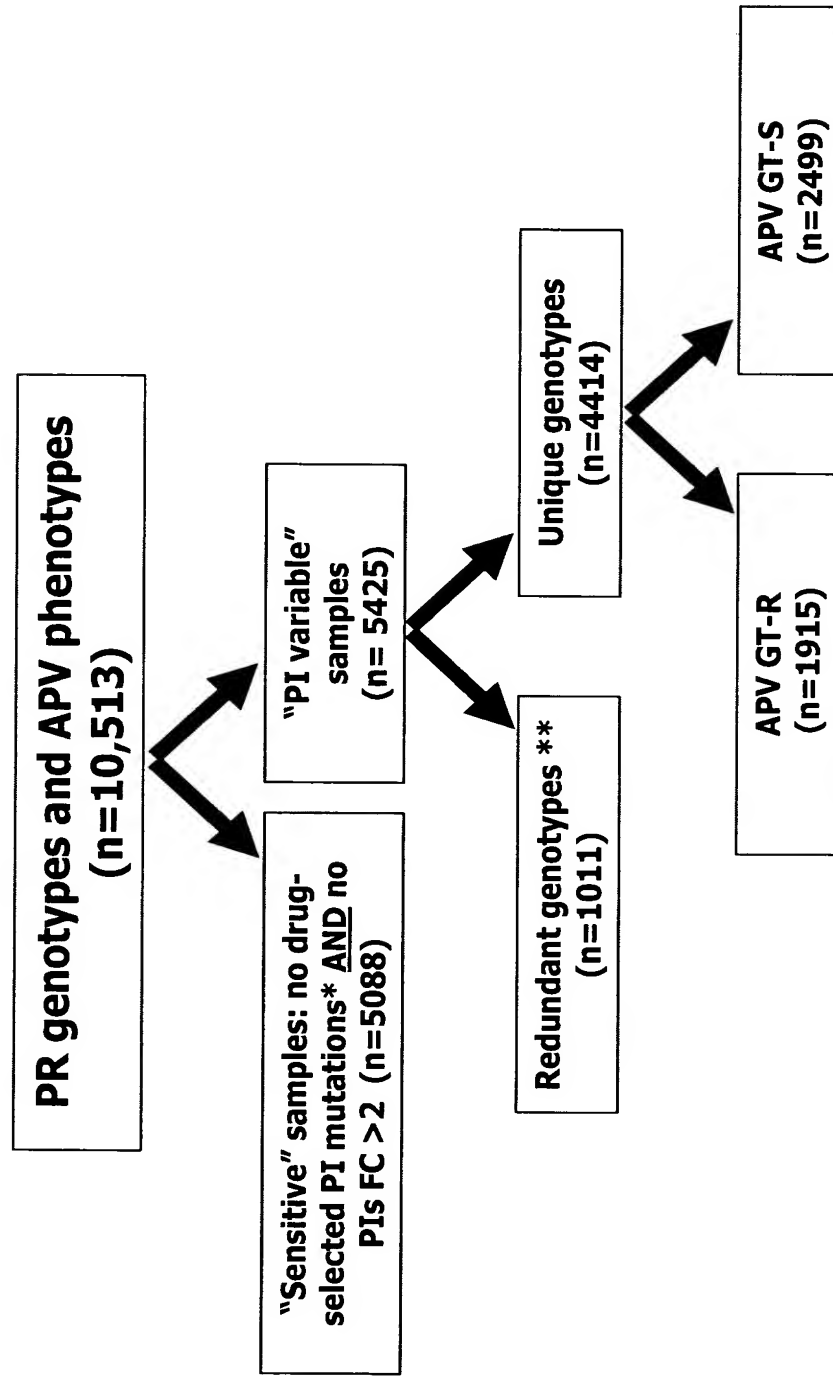


FIG. 1

**FIGURE 2**

## ***Phenotype-Genotype Data Analysis***



\* drug-selected PI mutations: 23, 24, 30, 32, 33F, 46, 48, 50, 53, 54, 82 (except 82I), 84, 88, 90

\*\* samples with the same PR genotype

### **FIGURE 3A**

SEQ. ID. NO: 1: NL4-3 HIV Protease Amino Acid Sequence

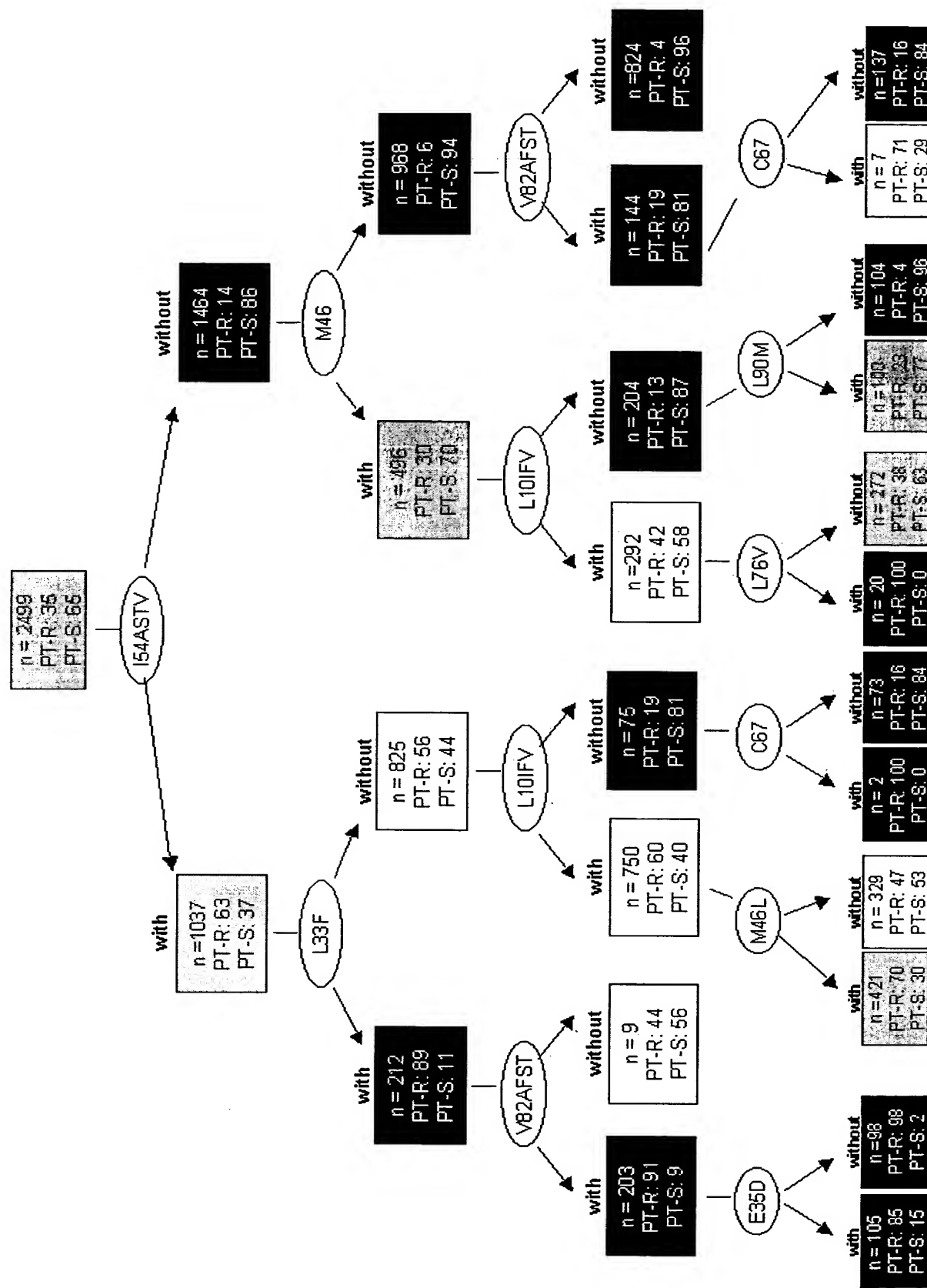
PQITLWQRPL VTIKIGGQLK EALLDTGADD TVLEEMNLPG RWKPKMIGGI  
GGFIKVRQYD QILIEICGHK AIGTVLVGPT PVNIIGRNLL TQIGCTLNF

### **FIGURE 3B**

SEQ. ID. NO: 2: NL4-3 HIV Protease Gene Nucleotide Sequence

1-10 cct cag atc act ctt tgg cag cga ccc ctc  
11-20 gtc aca ata aag ata ggg ggg caa tta aag  
21-30 gaa gct cta tta gat aca gga gca gat gat  
31-40 aca gta tta gaa gaa atg aat ttg cca gga  
41-50 aga tgg aaa cca aaa atg ata ggg gga att  
51-60 gga ggt ttt atc aaa gta aga cag tat gat  
61-70 cag ata ctc ata gaa atc tgc gga cat aaa  
71-80 gct ata ggt aca gta tta gta gga cct aca  
81-90 cct gtc aac ata att gga aga aat ctg ttg  
91-99 act cag att ggc tgc act tta aat ttt

**FIGURE 4**



Predictive combinations

Strong (>80% R): (33, 54, 82), (54, 67), (10, 46, 76)

Moderate (60-80% R): (10, 46, 54), (67, 82)

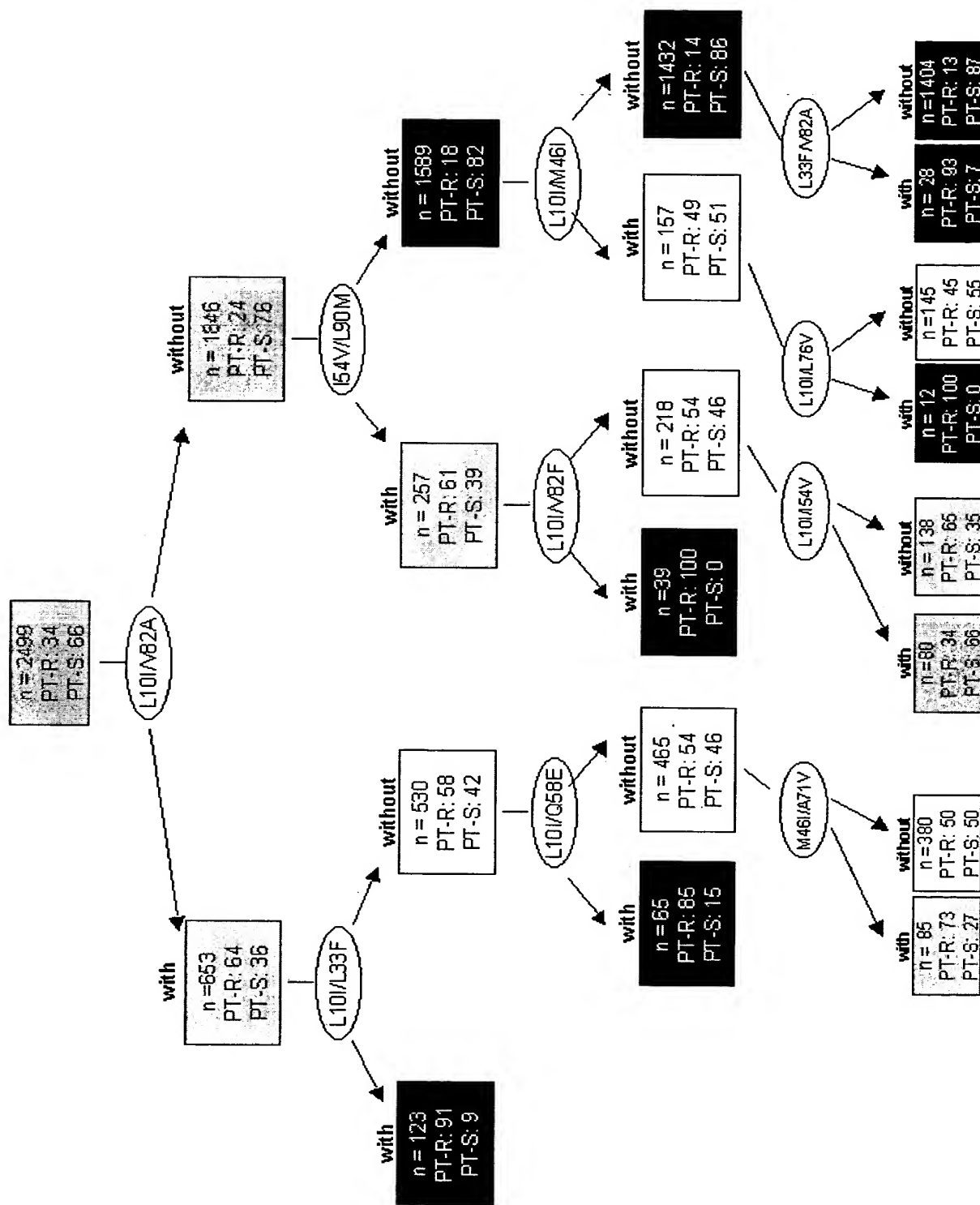


Increasing proportion of resistant samples

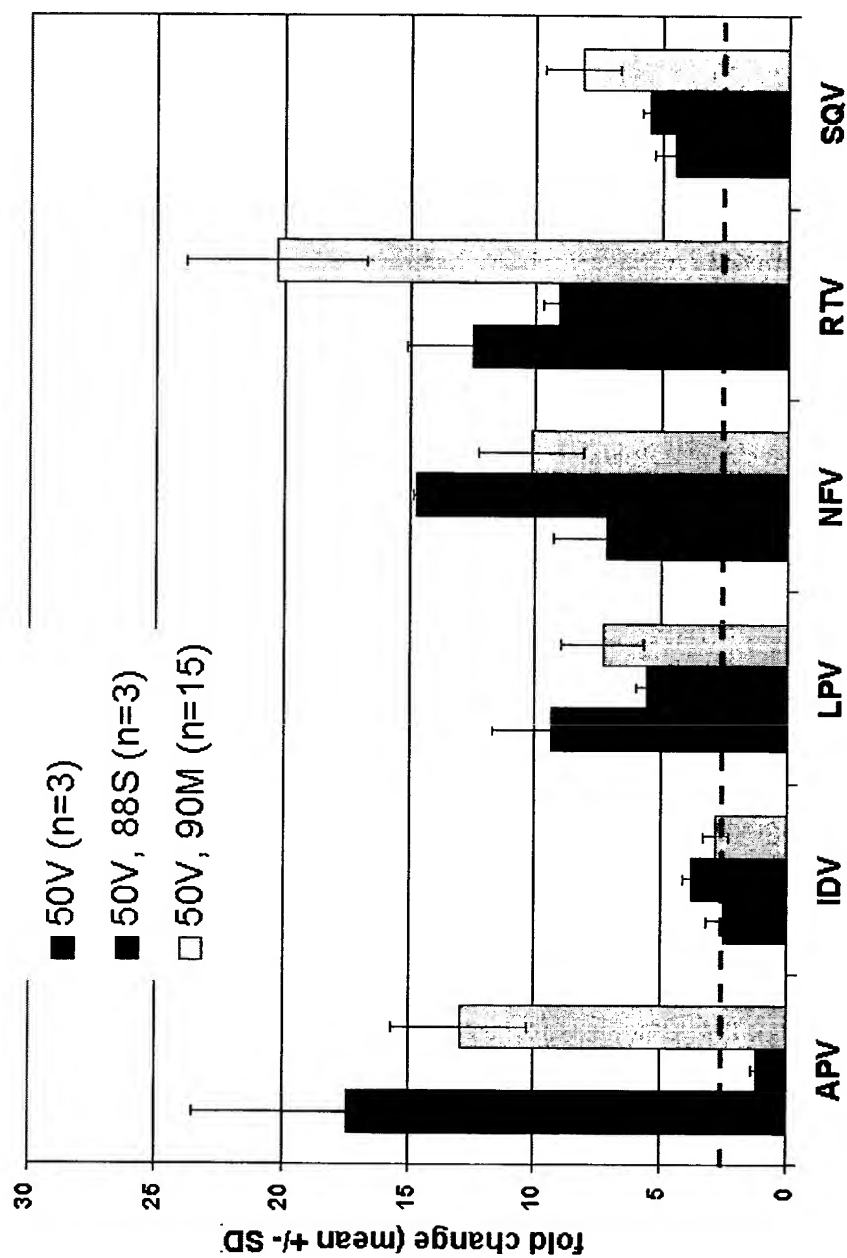
	10I	10F	11X	24I	33F	34Q	35D	43T	46I	46L	47V	48M	48V	53L	54A	54S	54T	54V	58E	67	71L	71V	73X	76V	82A	82F	82S	90M	91A
10I		3 (47)	14 (42)	4.7 (172)	14.1 (161)	4.4 (30)	2.5 (463)	6.9 (116)	3.3 (395)	4.9 (229)	10.9 (27)	41.6 (23)	4.3 (182)	4.5 (146)	10 (44)	35.9 (40)	9.7 (49)	3.1 (646)	6.2 (137)	28.3 (16)	3 (576)	3 (254)	58.6 (32)	3.5 (653)	12.5 (76)	5.1 (48)	2.2 (704)	15.1 (16)	10I
10F				6.8 (37)	7.6 (45)			6 (25)	2.9 (70)	4.8 (46)				6.4 (22)	4.5 (116)			7.2 (24)	20.8 (12)		3.3 (64)	11 (34)	17 (10)	4.2 (100)		18.9 (11)	3.3 (123)		10F
11X		14 (42)					17 (30)		17.8 (21)	24.6 (14)								71.8 (99)			12.8 (46)	22.7 (26)		76.3 (43)			13.2 (46)		11X
24I		4.7 (172)	6.8 (37)		24.6 (42)		4.7 (67)	8.4 (36)	3.1 (116)	5.8 (77)				12.1 (37)				4.8 (109)	20.8 (24)		4 (109)	22.7 (26)		5.1 (158)				24I	
33F		14.1 (161)	7.6 (45)		24.6 (42)		10.1 (127)	46.3 (51)	18.9 (55)	20.8 (64)			16.5 (39)	24.6 (56)	20.8 (12)		26.4 (15)	12.8 (171)	13.2 (46)		14.2 (136)	30.2 (66)	22.7 (13)	17 (160)		10.4 (13)	9.4 (150)	17 (10)	33F
34Q		4.4 (30)																			4.8 (31)								34Q
35D		2.5 (463)																											35D
43T		6.9 (116)	6 (25)				9.7 (68)		7 (52)	17 (50)			28.4 (30)	14.2 (34)				8.2 (128)			6.8 (60)	10.7 (20)		9.1 (128)		13.2 (16)	8.4 (82)	43T	
46I		3.3 (395)	2.8 (76)	17.8 (21)	3.1 (116)	18.9 (55)	2.7 (215)	7 (52)			35.9 (20)		23.8 (27)	6.1 (72)	11.3 (14)			3.8 (286)	5.9 (74)		2.8 (282)	3.2 (171)	11.6 (50)	4.2 (250)	20.3 (47)		2.2 (400)		46I
46L		4.9 (229)	4.8 (46)	24.6 (14)	5.8 (77)	20.8 (64)	4.2 (138)	17 (50)					11.6 (58)	7.1 (39)			30.2 (17)	5.1 (232)	11.6 (59)		4.8 (198)	4.5 (54)		4.4 (271)	11.3 (14)	4.6 (191)		46L	
47V		10.8 (27)					10.4 (13)											17 (20)			14.2 (17)						32.1 (18)		47V
48M		41.6 (23)																											48M
48V		4.3 (182)					4.7 (70)																						48V
53L		4.5 (146)	6.4 (22)				6 (49)											2.8 (86)	5.7 (26)		8.2 (115)	10.4 (13)		4.8 (191)		3.5 (100)			53L
54A		10 (44)	4.5 (116)				7.1 (19)											5.5 (161)	14.2 (17)		4.2 (128)	6.9 (66)		5.8 (139)	22.7 (13)	4.1 (137)			54A
54S		35.9 (40)																											54S
54T		9.7 (49)																											54T
54V		3.1 (646)					3.7 (399)														3.4 (529)	6.7 (100)	20.1 (35)	3.1 (652)	17 (60)	5.3 (61)	3.7 (594)	13.9 (25)	54V
58E		6.2 (137)	7.2 (24)				4.2 (96)											6.5 (137)			6.7 (100)	23.3 (40)	20.8 (12)	9.5 (121)			4.7 (142)		58E
67		20.8 (12)																3.1 (53)	10.4 (13)										67
71L		26.3 (16)																											71L
71V		3 (576)	3.3 (64)	12.8 (46)	4 (109)	14.2 (136)	1.9 (412)	6.6 (80)	2.8 (282)	4.8 (199)	14.2 (17)																		71V
73X		3 (254)	11 (34)	22.7 (26)	22.7 (26)		2.8 (143)	10.7 (20)	3.2 (171)	4.5 (54)											2.1 (230)								73X
76V		56.6 (32)	17 (10)				26.3 (23)																						76V
82A		3.5 (653)	4.2 (100)	76.3 (43)	5.1 (158)	5 (26)	3.8 (340)	9.1 (128)	4.2 (250)	4.4 (271)	16.1 (19)	34 (19)	4.8 (191)	5.8 (139)	12.1 (37)	30.8 (41)	9.4 (54)	3.1 (652)	9.5 (121)	5.1 (26)	22.7 (13)	4.2 (493)	8.1 (148)	10.9 (27)		8 (21)	3.6 (464)	20.8 (24)	82A
82F		12.5 (76)					8.7 (45)											17 (60)										17.9 (63)	82F
82S		5.1 (48)	18.9 (11)				5.9 (29)																						82S
90M		2.2 (704)	3.3 (123)	13.2 (46)			1.8 (500)	8.4 (82)	2.2 (400)	4.6 (191)	32.1 (16)		3.5 (100)	4.1 (137)	45.3 (25)		34 (19)	3.7 (534)	4.7 (142)	2.3 (66)	2.2 (606)	2.1 (328)	25.5 (29)	3.6 (484)	17.9 (63)	5.2 (34)	28.4 (15)	90M	
91A		15.1 (16)																13.9 (25)										28.4 (15)	91A

FIGURE 5

**FIGURE 6**



**FIGURE 7**



additional mutations present:

L10I, I13V, E35D, M36I, R41K, L63P, A71V